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Range Resource Report

Ochoco Wild and Free Roaming Horse Management Plan Update Environmental Assessment

Lookout Mountain Ranger District, Ochoco National Forest
Crook County, Oregon

Picture courtesy of Kathy Schrage

Prepared by: Benjamin F. Cross and Jacob Young
3160 NE Third Street
Prineville, OR 97754

Introduction

This report discusses the effects and consequences of the Ochoco Wild and Free Roaming Horse Management Plan Update Environmental Impact Statement alternatives on available forage and management of livestock grazing within the Big Summit Wild Horse Territory (Territory). See *Wild Horse Specialist Report* for discussion involving upland and riparian vegetation. The Territory is within the Reservoir grazing allotment. This document contains a description of the permitted livestock grazing that occurs within the Territory. The wild horse Appropriate Management Level (AML) numerical ranges will be the only issue discussed in terms of having an effect on livestock operations and management. All other proposed actions related to wild horse management as described in Chapter 2 have no effect, because they are related to how the AML will be managed for and achieved. This report is a discussion of short and long-term, direct, indirect, and cumulative effects associated with the implementation of the AML ranges of each of the three alternatives on forage availability and permitted livestock management.

Affected Environment

General Analysis Area Description

The Territory is approximately 25,434 acres in size and located in both the Lookout Mountain and Paulina Ranger Districts, approximately 25 miles northeast of Prineville, Oregon. Landscapes within the analysis area are comprised mainly of steep-timbered slopes, juniper/sagebrush ridgelines, and open meadows. Lands within the analysis area are comprised entirely of National Forest System (NFS) lands. The Territory is almost entirely within the Reservoir Allotment, although there is nearly 9,000 additional acres within the allotment that are not part of the Territory. Although the Reservoir Allotment is not physically divided by a fence into two pastures, the allotment has been divided in two sheep band areas – which will be referred to as pastures in this document: Canyon Creek and Reservoir. The Reservoir Allotment has a Term Grazing Permit issued to a permittee authorizing two bands of sheep, with 1,100 ewe/lamb pairs each to graze from June 16 to September 30. **Table 1** below depicts the permitted livestock use within the Canyon Creek and Reservoir pastures.

Table 1. Permitted livestock use within the Reservoir Allotment.

Pastures	Total Acres	Permitted Numbers	Kind & Class	Season of Use	AUMs	Acres / AUM
Canyon Creek	20,500	1,100	Sheep - Ewe/Lamb	06/16 - 09/30	1,161	18
Reservoir	13,915	1,100	Sheep - Ewe/Lamb	06/16 - 09/30	1,161	12

Grazing History within the Analysis Area

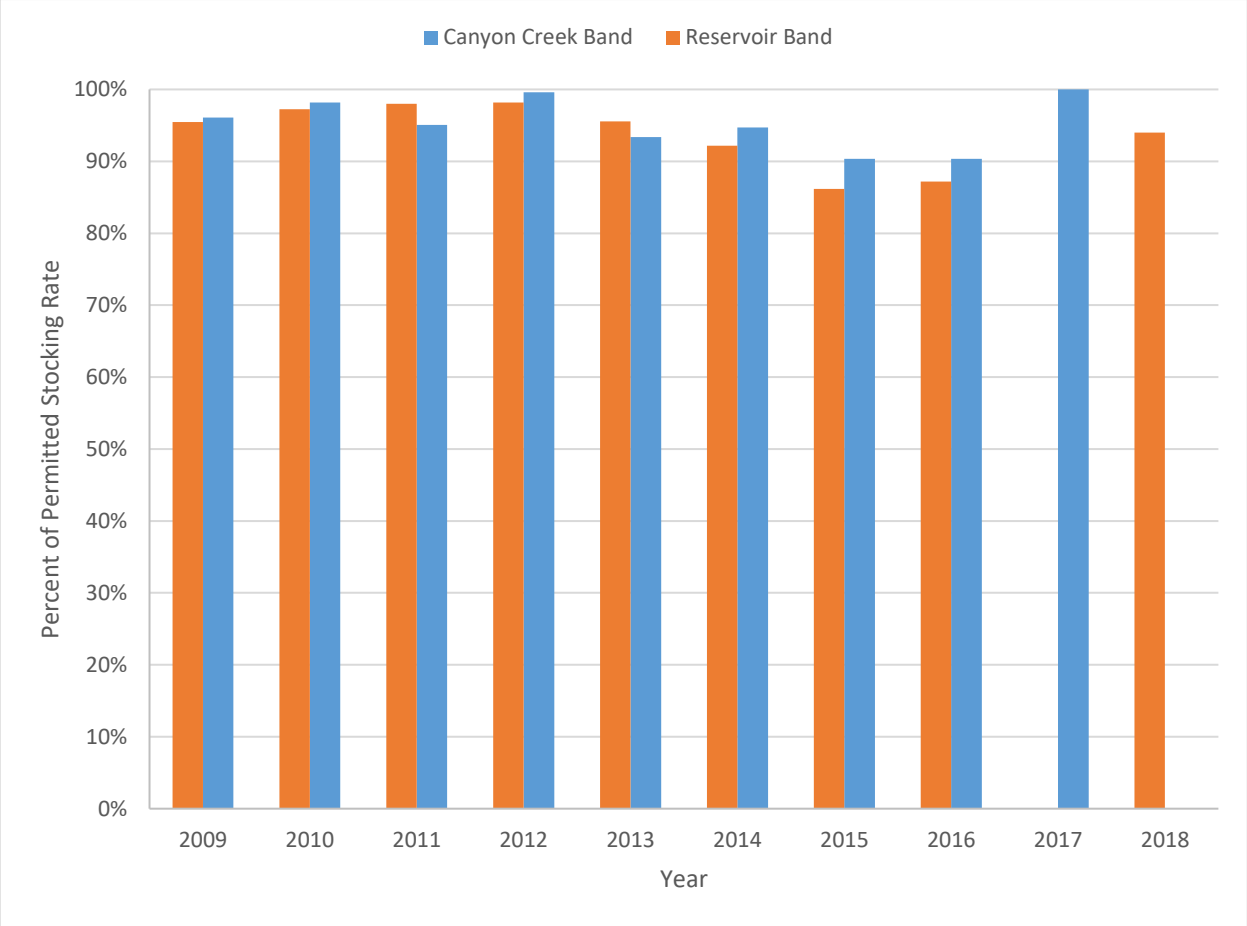
Grazing of domestic livestock (cattle, sheep, and horses) has occurred in the analysis area since the late 1800s. In both subject pastures within the analysis area, large bands of sheep (ranging from 1,000 to 3,000 ewe/lamb pairs) were grazed until after the establishment of the Ochoco National Forest in 1907. A.S. Ireland, Forest Supervisor of The Western Division of the Blue Mountain Reserve and The Maury Mountain Forest Reserve – precursor to the Ochoco National Forest – estimated that in 1906 a total of 340,000 sheep and 30,000 cattle and horses grazed the Western Division Blue Mountain Reserve (Hodgson, 1913). During this time, heavy livestock use impacts to soil and vegetative resources were severe and these impacts continue to affect the ecosystems of the Ochoco National Forest.

Since the establishment of the Ochoco National Forest, an effort was made to reduce livestock numbers to correspond to the actual carrying capacity of the land. During this effort Animal Unit Months (AUMs) of available forage were determined for the designated grazing allotments. (*For the purposes of this*

document an AUM is calculated on an Animal Unit Equivalent of 0.30 for a ewe with a nursing lamb.) According to records, although allotment boundaries and names have changed over the years, only sheep have been permitted to graze the analysis area since the establishment of the Ochoco National Forest.

In 1975 when the *Ochoco Wild & Free Roaming Horse Management Plan* was written, the Canyon Creek and the Reservoir pastures were each permitted for 1,100 ewe/lamb pairs between June 16 and September 30 as it is permitted now. Over the past ten years, sheep band numbers for the Canyon Creek and Reservoir pastures have been below permitted stocking rates. Figure 1 depicts the use for the past 10 years. In 2017 and 2018 the permittee requested non-use due to resource concerns, to rest one pasture each year. Reduction in numbers in the previous years was a result in the decrease in forage availability and forage quality, based on conversations with the current permittee and confirmed by vegetation data collected within the analysis area (*see Wild Horse Specialist Report*). Table 2 below depicts the stocking information of each band by grazing year.

Figure 1. Percent of permitted use based on authorized stocking rates for the Canyon Creek and Reservoir bands over the past ten years.



Allocated Forage and Allowable Use

The LRMP (1989) dedicates forage utilization tables based on types of communities, range management levels and the existing range conditions of those communities. These utilization allocations are a cumulative annual use by big game, wild horses and permitted livestock. The amount of forage allocated, or the allowable use standard is determined based on the forage conditions, range resource

management level, and community type within that allotment. *See Appendix XX for the Allowable Use Tables.* The actual use, or utilization, within the allotment is based on the residual stubble heights measurements of graminoid species, as described in Implementation Monitoring Biological Program for Pacfish and Infish (USDA, 2003) otherwise known as annual implementation monitoring. This monitoring helps determine the utilization levels within grazing allotments and/or pastures.

Annual implementation monitoring is generally done at Designated Monitoring Areas (DMAs) that are located in areas that most likely receive the highest grazing pressure by livestock, postulating that the entirety of the pasture would show the same stubble heights, or a greater stubble height. Therefore, it is important to note that the DMAs that are discussed hereafter were established in the late 1990s when horse numbers were below the maximum AML and were specifically located in areas that would be representative of the use of the permitted sheep bands. There are four DMAs within the Territory aimed at assessing permitted livestock use. At each DMA the residual stubble height of the key forage species, generally mixed grasses or sedges, is measured after the sheep graze the pasture and at the end of the growing season. The residual stubble heights are recorded between 1-inch and 12-inches, any stubble heights greater than 12-inches is recorded as ">12". Utilization cages, installed at each DMA within the analysis area beginning in 2014, were used to collect and weigh the key forage species at the end of the growing seasons.

Average height/weight curves were created for most DMAs from data collected in 2014 through 2018 to calculate utilization. The Wild Horse Report discusses that a 30 percent utilization level was used in the AML analysis due to the Wild Free-Roaming Horse and Burro Act of 1971 requiring management of wild horses at the "minimal feasible level." *See AML Analysis and Wild Horse Reports.* The median stubble height of each mid and end-of-season visit to the DMA is then converted to percent utilization using the average height/weight curves. However, if the median stubble height is ">12", then utilization is considered to be unmeasurable but, based on the height/weight data collected, utilization is within the allowable use standard of 30 percent (+/- 5%). Just as the DMAs reflect the shortest stubble height, they also reflect the highest percent utilization. The rest of the pasture would show the same percentage of utilization or less. As this report looks at the interactions of permitted livestock grazing within the territory, Table 2 show utilization when the sheep have left the pastures (mid-season). This data is maintained within the analysis file for this project at the Lookout Mountain Ranger District Office.

Table 2. Depicts whether or not utilization was measured within the 30% utilization level by DMA for the past ten years.

DMA	2009	2010	2011*	2012	2013	2014	2015	2016	2017	2018
Canyon Creek-1	Y	Y	NM	Y	Y	Y	Y	Y	Y	Y
Canyon Creek-2	Y	Y	NM	Y	Y	Y	Y	Y	Y	Y
Reservoir-1	Y	Y	NM	Y	Y	Y	Y	N	N	Y
Reservoir-2	N	Y	NM	Y	Y	Y	Y	Y	Y	Y

*NM = not measured - DMA data was not collected during the 2011 grazing season.

Scasta et al (2016) in their meta-analysis of prior research on wild horse competition for forage with livestock and big game wildlife showed competition with sheep during the spring and summer grazing periods. These findings match what has been observed on the Reservoir allotment. The permitted sheep AUMs have been voluntarily decreased because of a lack of forage the permittee and the sheep herder have noticed since 2012. Data collected on riparian areas in the Territories winter range in the fall of 2017 and 2018 show utilization levels ranging from 58-80% with evidence of wild horses being the highest contributor of utilization. In fact, in 2018 in the Canyon Creek pasture when utilization levels ranged from 58-77%, sheep did not graze in the area. *See the Wild Horse Report for further information.*

Livestock Management

The Territory is grazed by two bands of sheep that graze both the Canyon Creek and Reservoir pastures. Generally, the Reservoir band grazes east of Round Mountain, while the Canyon Creek band grazes on the west side. Detailed instruction manuals, *"Canyon Creek Allotment Sheep Trailing Instructions"* and *"Reservoir Allotment Trailing Instructions"*, were written specifically for each sheep band by the permittee with cooperation from the U.S. Forest Service in 1999 and amended over the years as conditions and situations have changed. A copy of these instruction manuals can be found on file at the Lookout Mountain District Office. The permittee currently feels that the increasing wild horse numbers and the associated competition for forage has made following the instructions untenable, due to the horse use prior to and while the sheep move between camp areas. The instruction manuals give specific directions for band movements and other general logistics on a daily basis to efficiently and effectively graze the allotments with minimal impacts to the environment, i.e. instructions specifically dictate that bedding areas are located away from streams. Further details on band movements are discussed later in this section.

Sheepherder Camps and Herding Practices

Throughout the Canyon Creek and Reservoir pastures there are established camps from which sheep grazing operations (i.e. grazing, watering, bedding, etc.) for the area are based. There are 32(31) camps utilized by the Reservoir sheep band and 38(34) camps utilized by the Canyon Creek band in the Territory. The instruction manuals give specific directions from each camp location to where the band is to graze, water, siesta/bed-down on each day they are at that camp. Established camps are utilized between 1 and 6 days, depending on abundance of nearby resources necessary for the sheep band. These instructions ensure that localized riparian areas are only grazed for a short duration, which allows for regrowth compared to season-long grazing. Each band is moved along its respective trailing route between camps, as described in the instruction manual for that band, by at least one herder with dogs for herding and livestock protection.

Distribution and Structural Range Improvements

Structural range improvements (i.e. water developments, fences, etc.) are intended to influence livestock distribution on their associated allotments. Permittees are responsible for the maintenance of all of the structural range improvements that are assigned to them in their Term Grazing Permit. Maintenance requirements can range from simple mending of wire or pipeline to replacement of structure components to replacement of the entire system. Due to the intensive management by the sheepherders and dogs in the Reservoir Allotment, fencing is not needed to manage distribution of the sheep and water developments are utilized only for providing water to the sheep.

Although there is no pasture fencing within the Territory, there is approximately 21.5 miles fencing that follow portions of the boundary. These fences were constructed to maintain livestock within their respective allotments and are located mainly along the northwest, west, east, and portions of the southern boundary. There are also approximately 0.6 miles of fence associated with a few small exclosures, protecting sensitive areas. It should also be noted that there is no fences along the northeast boundary and a portion of the southern boundary of the Territory. As a result, wild horses have access to areas within the Reservoir Allotment that are not considered part of the Territory.

There are fourteen water developments associated with livestock management and listed on the Term Grazing Permit within the Territory. Of those fourteen developments; eleven are troughs, two are undeveloped, and one is a pond. These water developments are not only used by livestock, but by wild horses and big game wildlife as well. *See Appendix XX, Map X for locations of structural improvements.*

Environmental Consequences

The following section discusses the direct, indirect, and cumulative effects of each alternative with consideration to the livestock operations and management within the Territory. The wild horse Appropriate Management Level (AML) ranges will be the only action that will be discussed in terms of having an effect on livestock operations and management. All other proposed actions related to wild horse management as described in Chapter 2 have no effect, therefore those proposed actions will not be discussed.

The environmental effects discussed in this chapter will reflect the conditions within the Territory in regards to the wild horse herd being within the established AML range. This recognizes the fact that no matter which alternative is selected, reaching the established AML range will not occur immediately following the initiation of implementation. That being said, the environmental effects resulting from the current number of wild horses within the Territory and the current level of management are expected to persist for the short term until the AML range has been reached.

Effects Common to All Alternatives

Forage allocated for big game, wild horses, and domestic livestock is established by the LRMP, as previously discussed in the *"Allocated Forage and Allowable Use"* section of Chapter 3. Therefore, implementing any of the three alternatives will have no effect to forage allocation, only forage availability.

Regardless of the size of the wild horse herd, the wild horses are not managed as strictly as the sheep bands and predicting when and where the wild horses will be grazing specifically is not possible. Therefore, there is differing levels of competition for forage between wild horses and the permitted livestock, as well as wildlife. As outlined in the *Affect Environment* section above, there is the potential for competition between the wild horses and the permitted sheep during the spring and summer. This means that isolated areas of the allotment will receive varying levels of utilization by the wild horses prior to the sheep bands utilizing the same areas. This affects the management of the sheep once they start utilizing the areas, possibly shortening the length of time at each camp area or available grazing locations based on forage conditions (competition).

Components of the range improvements within the Territory can be subject to year-round damage and displacement due to wild horses rubbing against them or fighting nearby. The fences around portions of the Territory boundary also receive pressure from wild horses that may be trying to access better feed on the other side of the fence or trying to escape danger. Since these wild horse effects occur year-round, maintenance frequency and intensity necessary for these range improvements may be greater within the Territory, or at the Territory boundary, compared to range improvements removed from the Territory. This maintenance would need to be completed by the private land owners or the permittees whose allotments border the Territory.

Direct and Indirect Effects of each Alternative

Alternative 1 – No Action

Alternative 1 proposes the continued implementation of the current *Ochoco Wild & Free Roaming Horse Management Plan* (1975) in the Territory with an AML range between 55 and 65 horses. This AML range was determined with consideration to the permitted use described in the Term Grazing Permit in 1975. Since permitted use is the same as described on the current Term Grazing Permit, there would be little to no effects to forage availability from implementing this alternative. Alterations to sheep band management due to wild horse utilization within the Territory during the grazing season may occur. However, these changes in management are expected to be infrequent and may also be related to climatic conditions as well as wild horse forage utilization.

Implementing Alternative 1 is expected to result in isolated occasions where range improvements will need maintenance in relation to wild horse damage, specifically if the damage results in rendering the development nonfunctional.

Alternative 2

The AML under Alternative 2 is a range between 12 and 57 wild horses within the Territory. This new range was determined based on the changes in environmental conditions and the improvements to analytical tools (i.e. GIS, LIDAR, etc.) compared to 1975. The effects of implementing this alternative on the amount of available forage to sustain livestock grazing during the permitted grazing season are expected to be similar to Alternative 1, where alterations to sheep grazing patterns may occur. Again, these changes in management are expected to be infrequent and may also be related to climatic conditions. With this alternative the effects are expected to be less and occur less frequently as AML levels have the possibility to be lower, resulting in a lower likelihood for competition

The effects of implementing Alternative 2 to range improvements are expected to be dependent on the number of wild horses. When wild horse numbers are at the low end of the AML range, the frequency and magnitude of maintenance demands are expected to be very low and isolated. However, as the number of wild horses increase the frequency and magnitude of range improvement maintenance may increase due the potential for possible damage.

Alternative 3

Under alternative 3 the AML would be raised to a range between 150 and 200 wild horses within the Territory. This alternative was added to address public comments during scoping. The effects of implementing this alternative would have the greatest negative impact on permitted livestock grazing within the Territory. Currently there are at least 135 horses on the Territory, and since 2008 minimum horse counts have shown the population above the current AML upper limit of 65 horses. As outlined in the *Affected Environment* section above, at the current inventory of at least 135 horses, fall forage utilization levels have exceeded Forest Plan standards in multiple locations within the winter range. Depending on the resource conditions resulting in 150 to 200 horses, camps and grazing patterns would need to be adjusted to reduce competition and reduce resource concerns.

These high levels of utilization may have a long-term negative effects on the quality and availability of upland and riparian forage (Holechek et al., 2000). If plants are continuously over-utilized, plant vigor decreases and desirable species can be replaced with more competitive, undesirable species. This vegetative shift in riparian areas, due to differences in plants capabilities to hold streambanks together,

can lead to unstable streambanks, downcutting, and lowering of the water table, further changing riparian vegetative conditions. These changes may lead to a decrease in available forage and increased competition.

Clary and Webster (1989) conclude that, for healthy plant vigor, grazing in riparian areas must provide for re-growth of riparian plants after use, or should leave sufficient vegetation at the time of grazing for maintenance of plant vigor and stream bank protection. With fall utilization levels of 58-80% within the winter range of the Territory there is no opportunity for re-growth nor does it leave sufficient vegetation for plant maintenance or stream bank protection. The current inventory of 135 horses is below the proposed AML for this alternative, therefore once the AML is reached, over-utilization would continue at an even higher rate and forage availability would be reduced for the permitted livestock as well as big game and the wild horses. For the last two years when numbers have been 135 & 125, the permittee has volunteered to rest one band each year for resource concerns, only grazing half the permitted AUMS. This trend may continue, to protect plant vigor, but it causes direct effects to the permittee and his ability to sustain his grazing operation. Furthermore, the conditions of upland and riparian forage would continue on a downward trend within the already unsatisfactory riparian areas.

The effects of implementing Alternative 3 to range improvements are expected to have a greater negative effect of any alternative. When wild horse numbers reach the AML range, the frequency and magnitude of maintenance demands are expected to increase the frequency and magnitude of range improvement maintenance due the potential for possible damage.

Cumulative Effects for all Alternatives

For each alternative the cumulative actions considered in this report would include the non-commercial thinning, fuels management, and riparian restoration activities prescribed under the Canyon and HEJ Vegetation Management EIS documents.

Alternatives 1 and 2

Under Alternative 1 cumulative effects from the vegetative management activities may alleviate concerns of forage availability once AML is reached. These effects would be only slight and would have mid to long term positive effects depending on the timing of the activities and how long it takes to reach the number of horses prescribed in the AML levels.

Alternative 3

Under Alternative 3 cumulative effects from the vegetative management activities would likely have no effected based on the treatment activities as forage availability would continue to be diminished for the permitted livestock.

Literature Cited

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